AN/BPS-15H RADAR with Voyage Manager
for
USS ABRAHAM LINCOLN
USS GEORGE WASHINGTON
Battle Groups
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AN/BPS-15H Radar with VMS Purpose

- Provide AN/BPS-15H Radar Program status to support FY02 USS GEORGE WASHINGTON and USS ABRAHAM LINCOLN Battle Groups

AN/BPS-15H Radar with VMS Presentation Outline

- Requirements Documents

- System Diagram

- System Features
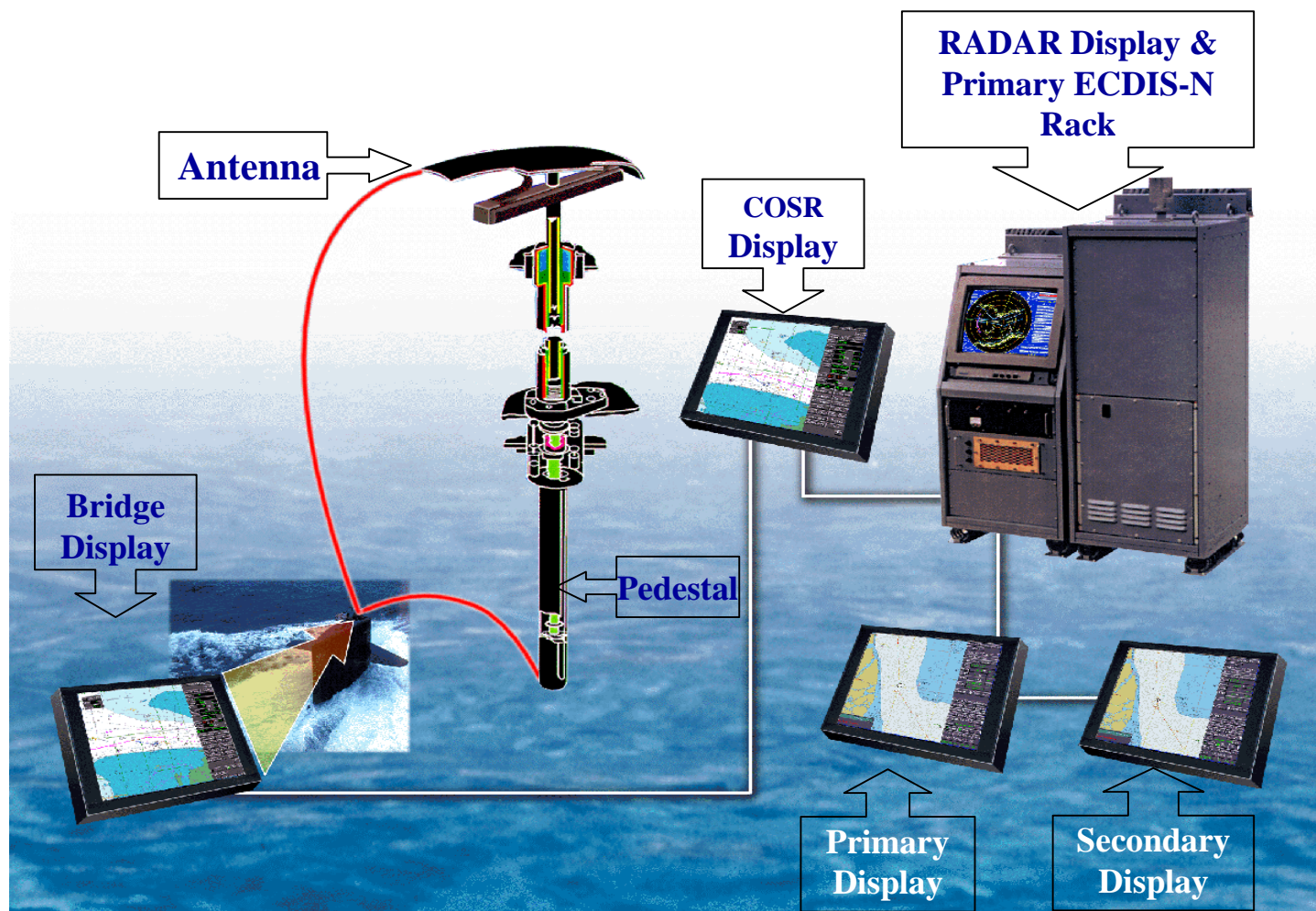
- Program Schedule

- Program Status

- Conclusions

AN/BPS-15H Radar Requirements Documents

- **OPNAV ltr Ser N872/8U657665 of 6 Apr 98 defines AN/BPS-15H/J thresholds and Pre-Planned Product Improvements (P³I).**

- **OPNAV ltr Ser N00/8U5000076 of 17 March 98 defines ECDIS-N Requirements.**

- **OPNAVINST 9420.2 dtd 15 Feb 01 defines the ECDIS-N certification process and clarifies ECDIS-N Requirements.**

- **AN/BPS Radar System Requirement Documents (SRDs) define specific features/capabilities.**

AN/BPS-15H RADAR with VMS System Diagram

RADAR Display & Primary ECDIS-N Rack

Antenna

COSR Display

Bridge Display

Pedestal

Primary Display

Secondary Display

AN/BPS- 15H Radar with VMS Baseline System Features

Radar Features

IEC 936, Shipborne Radar & IEC 872, ARPA compliant.

- **25 KW, 9410 MHz Magnetron Transceiver.**
- **10 Manual & 20 ARPA Target Tracking.**
- **Contact Track Data Output.**
- **Two VRM & EBL; Navlines; Dual Guard Rings, Sweep origin offset.**
- **11 Range Scales from .25 to 96 Miles.**
- **Fully integrated with VMS for Radar Contact Track overlay onto NAV charts.**
- **Fully integrated with VMS for Radar Video Overlay.**

ECDIS-N Features

IEC 61174, ECDIS with Navy Navigation Interfaces.

- **Dual system.**
- **Interfaces for depth, heading, speed, GPS, ESGN, RLGN, DPS.**
- **NIMA Direct Read Certified.**
- **IMO, IHO & IEC ECDIS compliant.**
- **Voyage Planning & Real-Time Navigation Tracking.**
- **Voyage Data Recorder and playback.**
- **Man Overboard**
- **Precise Anchoring**
- **Radar Contact Track overlay.**
- **Radar Video overlay.**
- **Removable hard drive for security**

AN/BPS- 15H Radar with VMS Baseline Upgrade Features

Block 1A Upgrade Features

Partial OPNAV 9420.2 implementation. Software Release MIL 5.0.

- **Full Radar integrated with VMS for Radar Video Overlay.**
- **Periscope Video Inset Window on VMS Displays.**
- **Double Confirmation of Selected Radar Controls.**
- **Manual Entry of Visual LOPs.**
- **Windows NT Security of Classified Data Position Uncertainty.**
- **Moving Haven.**

Block 2 Upgrade Features

Fully ECDIS-N Certified with Submarine unique features. Software Release 6.0.

- **Manual Entry of Radar LOPs.**
- **Direct Read NIMA TOD/GeoSym 4 Certified.**
- **DII-COE Level 5 Certified.**
- **CO Password Protect of approved voyage plans.**
- **Fathometer Interface.**
- **Chart Markup.**
  - **Operator Text Overlay.**
  - **Operating Areas.**
  - **Over-The-Horizon Areas of Uncertainty.**
  - **Joint Tactical Action Areas.**
  - **Submarine Generated Search Areas.**
  - **Notice Of Intent.**

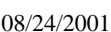# AN/BPS- 15H Radar with VMS Baseline Upgrade Features

Block 3 Upgrade Features

ECDIS-N Enhancements. Software Release MIL 7.0. (JAN 03)

- **VPF Data Update.**
- **Automated Visual LOP Entry.**
- **Automatic processing of SubNotes**
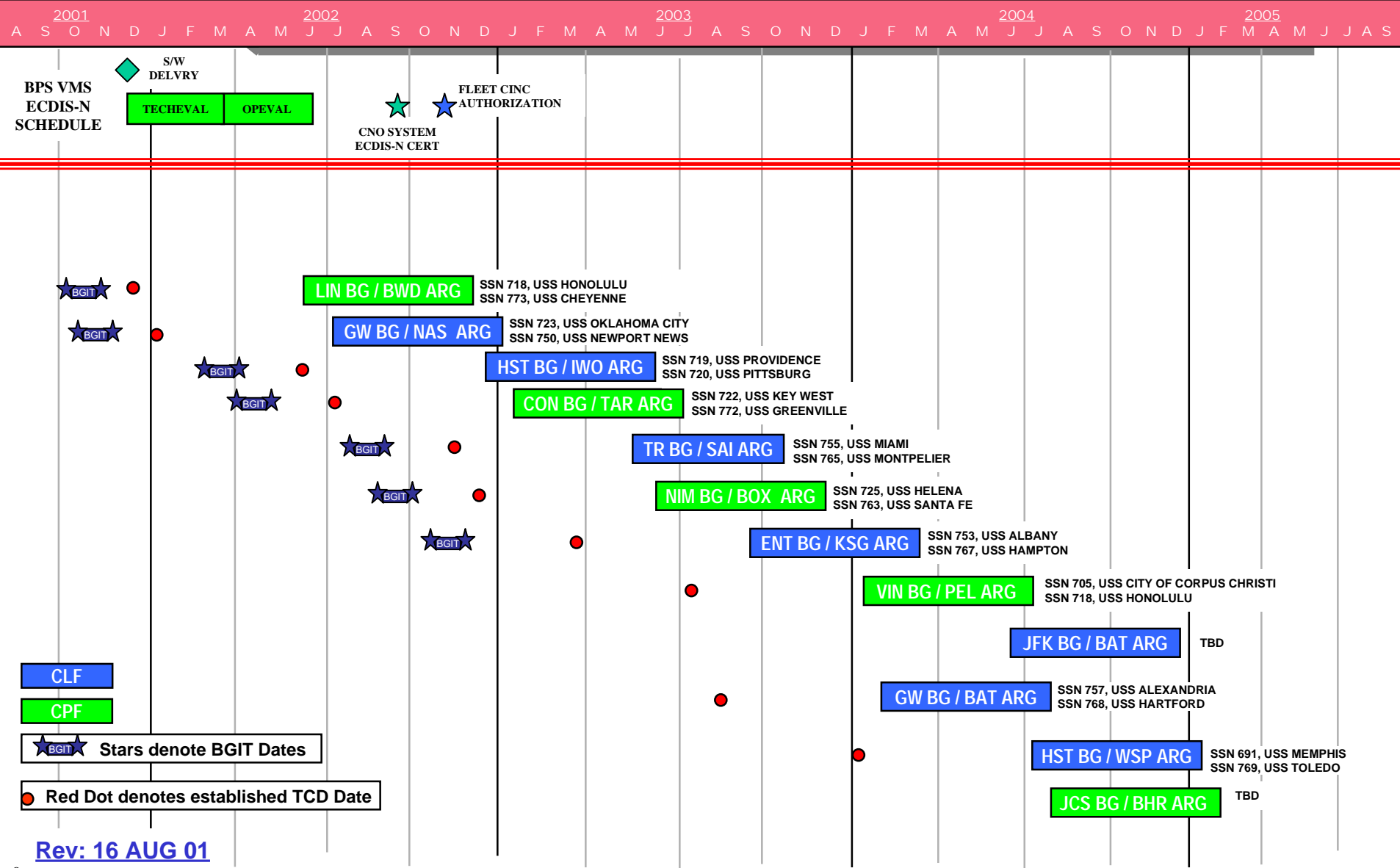
Block 4 Upgrade Features

ECDIS-N Enhancements. Software Release MIL 8.0. (JAN 04)

- **TIDS Interface.**
- **Polar Operation support.**
- **Position fixing using bottom contour matching.**

AN/BPS-15H Radar with VMS ECDIS-N Schedule

Proposed BG Deployment Schedule

2001	2002	2003	2004	2005
A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S

BPS VMS ECDIS-N SCHEDULE

S/W DELVRY

TECHEVAL | OPEVAL

CNO SYSTEM ECDIS-N CERT

FLEET CINC AUTHORIZATION

LIN BG / BWD ARG — SSN 718, USS HONOLULU / SSN 773, USS CHEYENNE

GW BG / NAS ARG — SSN 723, USS OKLAHOMA CITY / SSN 750, USS NEWPORT NEWS

HST BG / IWO ARG — SSN 719, USS PROVIDENCE / SSN 720, USS PITTSBURG

CON BG / TAR ARG — SSN 722, USS KEY WEST / SSN 772, USS GREENVILLE

TR BG / SAI ARG — SSN 755, USS MIAMI / SSN 765, USS MONTPELIER

NIM BG / BOX ARG — SSN 725, USS HELENA / SSN 763, USS SANTA FE

ENT BG / KSG ARG — SSN 753, USS ALBANY / SSN 767, USS HAMPTON

VIN BG / PEL ARG — SSN 705, USS CITY OF CORPUS CHRISTI / SSN 718, USS HONOLULU

JFK BG / BAT ARG — TBD

GW BG / BAT ARG — SSN 757, USS ALEXANDRIA / SSN 768, USS HARTFORD

HST BG / WSP ARG — SSN 691, USS MEMPHIS / SSN 769, USS TOLEDO

JCS BG / BHR ARG — TBD

CLF

CPF

BGIT — Stars denote BGIT Dates

Red Dot denotes established TCD Date

Rev: 16 AUG 01

AN/BPS-15H Radar with VMS Battle Group Installation Status

Ship	BPS-15H Baseline	Blk 1A Upgrade	Blk 2 Upgrade
USS ABRAHAM LINCOLN CVBG (TCD – 15 Dec 01)			
SSN 718 USS HONOLULU	Completed	Oct 01	Dec 01
SSN 773 USS CHEYENNE	Nov 01 – Jan 02	Nov 01 – Jan 02	Nov 01 – Jan 02
USS GEORGE WASHINGTON CVBG (TCD – 10 Jan 02)			
SSN 723 USS OKLAHOMA CITY	Completed	Complete	Dec 01
SSN 750 USS NEWPORT NEWS	Completed	Oct 01	Dec 01

AN/BPS-15H Radar Baseline and Upgrade Installations accomplished by AIT dockside availability.

AN/BPS-15H Radar with VMS System Specific Issues

System Development

- *Issue: What is the schedule for initial delivery of the ECDIS-N certifiable equipment and computer program?*

- Response:

Ship	BPS-15H Baseline	Blk 1A Upgrade	Blk 2 Upgrade
USS ABRAHAM LINCOLN CVBG (TCD – 15 Dec 01)			
SSN 718 USS HONOLULU	Completed	Oct 01	Dec 01
SSN 773 USS CHEYENNE	Nov 01 – Jan 02	Nov 01 – Jan 02	Nov 01 – Jan 02
USS GEORGE WASHINGTON CVBG (TCD – 10 Jan 02)			
SSN 723 USS OKLAHOMA CITY	Completed	Complete	Dec 01
SSN 750 USS NEWPORT NEWS	Completed	Oct 01	Dec 01

Compliance with OPNAVINST 9420.2

- *Issue: What is schedule for DT/OT? Have all requirements for certification of readiness to commence operational evaluation (OPEVAL) and/or follow-on operational test and evaluation (FOT&E) been met? If so, what were the dates? If not, what is the schedule for compliance with the requirements.*

- Response:

DT-IIA, Land-based Test	1 Oct 01 - 26 Nov 01
DT-IIB, At-Sea Test	26 Nov 01 - 19 Jan 02
OTRR	25 Feb 02
OT-II	15 Mar 02 - 26 May 02

Compliance with OPNAVINST 9420.2 (cont'd)

- *Issue: Are there any requirements identified in enclosure (1) that the candidate system will not meet by Target Configuration Date? If so, what is the schedule for corrective action?*

- Response: All OPNAVINST 9420.2 requirements will be meet.

- *Issue: Are there any requirements that need amplification or clarification? If so, have those requirements been identified to N096BN.*

- Response: Final definition of VDU requirements.

AN/BPS-15H Radar with VMS System Specific Issues

Security Issues

- *Issue: Are there any classification problems that need to be addressed either procedurally or in the equipment design? (i.e. Are there any issues associated with storing and/or displaying classified chart information on the identified system?)*

- Response: Not at this time. Addressing Information Assurance as part of future implementation of TIDS.

System Test

- *Issue: Has N096 been contacted to arrange for DNC direct read certification? If not, what is the desired schedule for performing this test?*

- Response: VMS is DNC Direct Read Certified by NIMA.

- *Issue: Has a schedule for validation of system specific procedures for NAVCERT with candidate ECDIS-N been established with SPAWARSYSCEN Charleston (i.e. NAVSSI Block 3 build 4, NAVSSI Lite, and VMS)? If not, what is the proposed schedule for this validation?*

- Response: Discussions are on-going with SPAWAR to define procedures and to perform a validation.

AN/BPS-15H Radar with VMS CVBG Specific Issues

CVBG Equipment Procurement

- *Issue: Does equipment need to be procured to support shore-based training? If so, has the required equipment been procured? If it hasn't been procured, what is the procurement schedule (for each installation)?*

- Response: Hardware procured and installed at SUBSCOL. S/W Release MIL 6.0 to be installed in Jan 02.

CVBG Equipment Procurement (cont'd)

- *Issue: Does equipment need to be procured to meet CVBG requirement? If so, has the required equipment been procured? If it hasn't been procured, what is the procurement schedule (for each installation)?*
- Response: All hardware and software is procured.

- *Issue: Are there any known funding or procurement issues that will prevent meeting of the schedule?*
- Response: No.

AN/BPS-15H Radar with VMS
CVBG Specific Issues

CVBG D-30 Process (Compliance with CLF CPF INST 4720.3A)

- *Issue: Have required entries been made into the electronic CCB? If not, what is the schedule for making the required entries?*

- Response: Yes.

AN/BPS-15H Radar with VMS CVBG Specific Issues

CVBG D-30 Process (cont'd)

- *Issue: Will all final installations and/or computer program deliveries be completed by the identified Target Configuration Date(s) (TCD)? If not, have the appropriate A-O messages been drafted? If the messages are required and have not been generated, what is the schedule for submission?*

- Response: No. USS Cheyenne (SSN 773) installation of the BPS-15H Radar is scheduled per SUBPAC for 26 Nov 01 to 10 Jan 02.

AN/BPS-15H Radar with VMS
CVBG Specific Issues

Installation

- *Issue: Are there any prerequisite installation/configurations required?*

- Response: No.

- *What equipment changes are required?*

Ship Response:

Ship	BPS-15H Baseline	Blk 1A Upgrade	Blk 2 Upgrade
USS ABRAHAM LINCOLN CVBG (TCD – 15 Dec 01)			
SSN 718 USS HONOLULU	Completed	Oct 01	Dec 01
SSN 773 USS CHEYENNE	Nov 01 – Jan 02	Nov 01 – Jan 02	Nov 01 – Jan 02
USS GEORGE WASHINGTON CVBG (TCD – 10 Jan 02)			
SSN 723 USS OKLAHOMA CITY	Completed	Complete	Dec 01
SSN 750 USS NEWPORT NEWS	Completed	Oct 01	Dec 01

Installation (cont'd)

- *Issue: Have all required organizations approved installation of equipment and computer programs? If not, what is the schedule for obtaining approval?*

- Response: Yes.

- *What is the schedule (by ship included those identified to support DT/OT) for installation of the equipment and computer programs? How much time is required to completed each installation?*

- Response: BG Installation Schedule provide in earlier slide. System installation requires 30 days, Upgrades require 4 days.

Installation (cont'd)

- *Issue: Which required organizations have agreed to the proposed schedule(s). Which ones have not and what is the schedule to get their agreement?*

- Response: OPNAV, SUBLANT, SUBPAC, NAVSEA

- *Who (i.e. shipyard, Alteration Installation Team, etc.) will perform the installations? If an AIT is performing the installation, have all of the requirements of NAVSEA Technical Specification 9090-310C been met?*

- Response: AIT to perform installations. NAVSEA Technical Specification 9090-310C has been met.

AN/BPS-15H Radar with VMS CVBG Specific Issues

Installation (cont'd)

- *Issue: What specific documentation has been prepared to support the installations/ If the required documentation has not been prepared, what is the schedule for preparation?*

- Response: SHIPALT 4124K & SOVT Procedures.

- *Have any issues been identified that will delay and/or prevent installation?*

- Response: None at this point in time.

AN/BPS-15H Radar with VMS Conclusions

- **The AN/BPS-15H Radar with Block 2 Upgrade will be installed on all Battle Group Submarines by Jan 02.**

- **This same system configuration will undergo formal ECDIS-N Certification which is to be completed by Dec 02.**